

# *Gulf Cooperation Council*

## **EDICT OF GOVERNMENT**

In order to promote public education and public safety, equal justice for all, a better informed citizenry, the rule of law, world trade and world peace, this legal document is hereby made available on a noncommercial basis, as it is the right of all humans to know and speak the laws that govern them.

GSO SYRUP (2011) (English): HIGH FRUCTOSE SYRUP (42 percent AND 55 percent)



BLANK PAGE



PROTECTED BY COPYRIGHT

هیئت ترقیتی سازمان دولتی معاونت اتحادیه دولتی الخلیج عربی  
**STANDARDIZATION ORGANIZATION FOR G.C.C (GSO)**

**DRAFT**

**GSO5/DS..../2011**

**شرابی فوکتوس ( 24% و 55%)**

**HIGH FRUCTOSE SYRUP (42% AND 55%)**

---

THIS DOCUMENT IS A DRAFT GULF STANDARD CIRCULATED FOR COMMENTS. IT IS, THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS A GULF STANDARD UNTIL APPROVED BY THE BOARD OF DIRECTORS.

## HIGH FRUCTOSE SYRUP (42% AND 55%)

### 1. SCOPE AND FIELD OF APPLICATION

This standard is concerned with high fructose syrup (42 and 55%) which is used in the food Manufacturing.

### 2. COMPLEMENTARY AND REFERENCES

- 2.1 GSO 1 –Labelling of Prepackaged Foods”.
- 2.2 GSO 20–Methods of the Determination of Contaminating Metallic Elements in Foodstuffs”.
- 2.3 GSO 134 –Methods of Test for Sugar Physical and Chemical Methods”.
- 2.4 GSO 148 –Sugar”.
- 2.5 GSO 122 –Methods of Test for Honey Bee”.
- 2.6 GSO 193 –Methods of Test for Wheat Flour”.
- 2.7 GSO 21 –Hygienic Regulations for Food Plants and Their Personnel”.
- 2.8 GSO 168 –Conditions of Storage Facilities for Dry and Canned Foodstuffs”.
- 2.9 GSO 839 –Food Packages – Part 1: General Requirements”.
- 2.10 GSO 312 –Fruits and Vegetable Products – Determination of pH”.
- 2.11 GSO. 409 –Microbiology – Guide for Aerobic Plate Count – Colony Count Technique at 30°C”.
- 2.12 GSO 842 –Microbiology – Guide for Enumeration of Yeast and Molds – Colony Count Technique at 25°C”.
- 2.13 GSO 287 –Microbiology – General Guide for Detection of Salmonella”.
- 2.14 GSO 407 –Microbiology – General Guide for Counting Coliforms – the Most Accountable Method”.

### 3. DEFINITIONS

**High Fructose Syrup:** is a product produced from the hydrolysis of starch by enzyme such as amylase or glucoamylase or by acid to form a glucose sugar solution, and then partially Isomerizing the glucose solution to fructose with glucose Isomerase or with alkali solution, to form a mixture solution of fructose and glucose, in which the fructose content should be 42% or 55% as dry basis.

### 4. REQUIREMENTS

The following requirements shall be met in high fructose syrup:

- 4.1 It shall be produced from raw materials complying with relevant Gulf Standards.
- 4.2 The production shall be comply with manufacturing practice according to Gulf standard mentioned in 2.7.
- 4.3 It shall be free from any foreign flavor and has a sweet taste.
- 4.4 It shall be free from dirt and other extraneous impurities.
- 4.5 It shall be free from insects and their part and rodents excreta.
- 4.6 It shall have a conductivity ash not more than 0.1% m/m.
- 4.7 It shall be free from starch.
- 4.8 The content of fructose, glucose, and other sugars, and total solids should be as follow:

Component	High fructose syrup 42%	High fructose syrup 55%
fructose to total solids	42 – 43%	55 – 57%
glucose to total solids	Not less than 51%	Not less than 38%
Other sugars	8%	6%
total solids	71.5 – 75.5 %	76.5 – 77.5%

- 4.9 It shall has a pH between 3.5 – 5.5
- 4.10 It shall has an optical density below 0.250.
- 4.11 It shall has a turbidity below 0.200.
- 4.12 Total count of bacteria shall not exceed 200 microbe/10g.
- 4.13 Number of yeast and molds shall not exceed 10/10g.
- 4.14 It shall be free from salmonella and coliform bacteria.
- 4.15 Contaminant of elements shall not exceed the following limits:

Arsenic (As): 1 PPM

Copper (Cu): 1 PPM

Lead (Pb) : 0.5 PPM

## **5. SAMPLING**

Samples shall be taken according to Gulf standard mentioned in 2.4.

## **6. METHODS OF TEST**

The following tests shall be carried out on representative sample taken according to item (5) to determine its compliance with all items of this standard.

- 6.1 Determination of moisture in high fructose syrup accordance with Gulf standard mentioned in item 2.3.
- 6.2 Determination of fructose content accordance with Gulf standard mentioned in item 2.5.
- 6.3 Determination of starch accordance with Gulf standard mentioned in item 2.5.
- 6.4 Determination of reducing sugars except fructose and glucose accordance with Gulf standard mentioned in item 2.5.
- 6.5 Determination of contaminating metallic elements accordance with Gulf standard mentioned in item 2.2.
- 6.6 Detection of insects, their parts, and rodents excreta accordance with Gulf standard mentioned in item 2.6.
- 6.7 Determination of conductivity ash accordance with Gulf standard mentioned in item 2.3.
- 6.8 Determination of pH accordance with Gulf standard mentioned in item 2.10.
- 6.9 Determination of optical density accordance with Gulf standard mentioned in item 2.3.
- 6.10 Determination of turbidity accordance with Gulf standard mentioned in item 2.3.
- 6.11 Determination of total count bacteria accordance with Gulf standard mentioned in item 2.11.
- 6.12 Determination of yeast and molds accordance with Gulf standard mentioned in item 2.12.
- 6.13 Detection of salmonella accordance with Gulf standard mentioned in item 2.13.
- 6.14 Detection of coliform bacteria accordance with Gulf standard mentioned in item 2.14.

## **7. PACKAGING, TRANSPORTATION, AND STORAGE**

The following shall be met on packaging, transportation, and storage:

### **7.1 Packaging**

The product shall be packed in clean, hygienic, dry, suitable, impermeable to moisture container, and well sealed, according to Gulf standard mentioned in item 2.9

### **7.2 Transportation**

Transportation of the product shall be carried out in such a way that protects the packaging from mechanical damage and contamination.

### **7.3 Storage**

The packages shall be kept in stores that clean, well-ventilated, and far away from sources of heat, moisture, and contamination, according to Gulf standard mentioned in item 2.8.

## **8. LABELLING**

without prejudice to provisions of Gulf standard mentioned in item 2.1 the following shall be declare on the label.

- the percentage of fructose (42% or 55%).
- starch source ( high fructose syrup from .....starch) .

## **REFERENCES**

- Chinese National Standard  
CNS 11369-N5215, 11-1985.
- Egyptian Standard No. 1587 - 1986.